

Qseven® Module with Intel® Elkhart Lake family processor

PQ7-M109

- Intel® Atom™ x6000E / Pentium® / Celeron® processors
- Support 24-bit LVDS, HDMI/DP output
- Support Four PCI Express Gen3 lanes
- Support two USB 3.0, six USB 2.0
- Options for eMMC 5.1 storage



Specifications

General

CPU

Intel® Celeron® N6210, Dual cores, 1.2 GHz, 6.5W TDP
 Intel® Celeron® J6412, Quad cores, 2.0 GHz, 10W TDP
 Intel® Atom® x6211E, Dual cores, 1.3 GHz, 6W TDP
 Intel® Atom® x6413E, Quad cores, 1.5 GHz, 9W TDP
 Intel® Atom® x6425E, Quad cores, 2.0 GHz, 12W TDP

Cache

4 MB L3 cache

Memory

Onboard 2G/ 4G/8G LPDDR4 with 3200 MT/s
 Dual memory channel, 64bit
 In Band-ECC (Intel® Atom® CPU)

Storage

Support onboard eMMC 5.1 flash up to 256GB

DisplayPort Interface

DDIO

24-bit Dual Channel LVDS up to 1920x1200@60Hz

DDI1/2

DisplayPort 1.4 up to 8K(7680x4320)@30Hz/ 4K(4096x2160) @60Hz
 Or HDMI 2.0b up to 4K(4096x2160) @60Hz

Audio

Intel® HD Audio integrated in SoC

Ethernet

1x Intel® i210 AT/IT

I/O Interfaces

PCIe

4x PCIe Gen3

USB

2x USB3.0, 6x USB 3.0/ 1x USB3.0, 8x USB2.0 (Option)

SATA

2x SATA 3.0 (6 Gbit/s)

Other I/O Interfaces

1x SDIO, 1x I²C, 1x HDA, 1x JTAG, 1x SMBus, 1x LPC, 1x UART, WDT

Video

GPU Feature Support

Intel® Gen 11 LP Graphics supporting DirectX 12 |
 OpenGL 4.5 OpenCL 1.2 | OpenGL ES 3.1 | HW accelerated video decoding
 HEVC/H.264/MPEG2/VP9/VC-1/WMV9/MJPEG | Encoding
 HEVC/H.264/VP9/MJPEG
 HDCP 1.4/2.2 for 4K premium content protection

Embedded BIOS

AMI UEFI with Fast Boot support | Display Auto Detection |
 Flash Update | Password Lock | OEM Logo for startup screen

Mechanical and Environmental

Form Factor

Qseven® 2.1

Dimension

Qseven module, 70 mm x 70 mm

Operating Temperature

Commercial: 0°C to +70°C, w/ 0.5m/s airflow
 Embedded: -40°C to +85°C, w/ 0.5m/s airflow

Humidity

0-95% RH, non-condensing

Power

Standard Input

5V DC ±5%

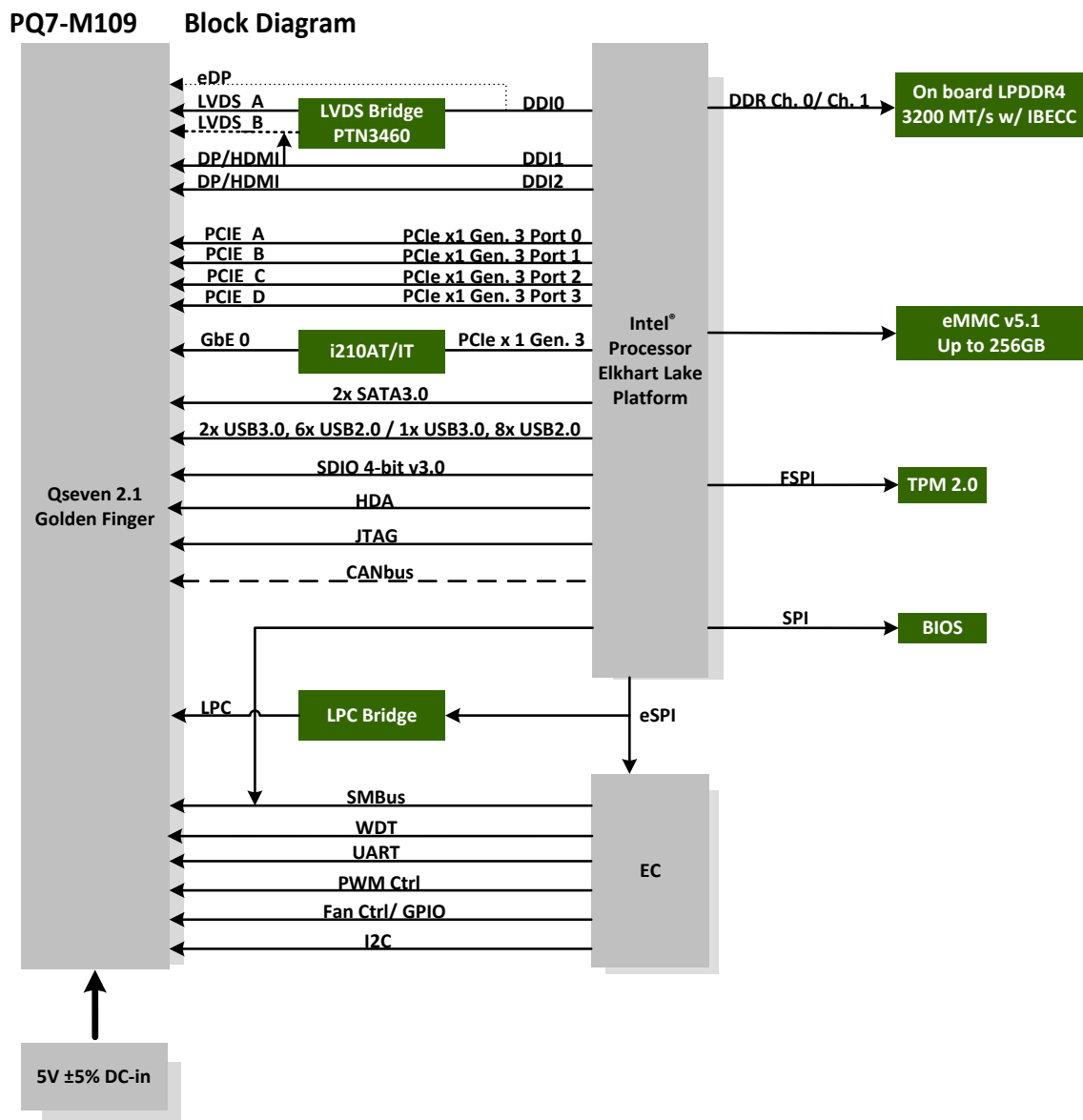
Power Management

ACPI 5.0 compliant | Fully Integrated Voltage Regulator (FIVR)

Operating System

Microsoft® Windows 10 Enterprise (64-bit), Linux
 By project request: Yocto, Android, Vxworks

Functional Diagram



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